

1 **In the Claims**

2 A detailed listing of all claims has been provided. A status identifier is
3 provided for each claim in a parenthetical expression following each claim
4 number.

5 Claims 1—105 were originally filed.

6 No claims were canceled.

7 No claims are newly added.

8 Accordingly, claims 1—105 are pending.

9
10 1. (Original.) An architecture comprising:

11 a table appearance manager to manage how a table appears in a document;

12 and

13 a spreadsheet functionality manager to manage spreadsheet functions for
14 the table.

15
16 2. (Original.) The architecture of claim 1, wherein the document is a markup
17 document.

18
19 3. (Original.) The architecture of claim 1, wherein the table appearance
20 manager provides a formula edit box to permit the user to enter a formula
21 into a cell of the table.

1 4. (Original.) The architecture of claim 1, wherein the table appearance
2 manager comprises:

3 a table component to support editing functionality of the table; and

4 a spreadsheet component to receive data and formulas input into the table.
5

6 5. (Original.) The architecture of claim 1, wherein the spreadsheet
7 functionality manager comprises:

8 a cell table to maintain data values and formulas used in the table; and

9 a format table to maintain formatting information used in the table.
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11 6. (Original.) The architecture of claim 1, wherein the spreadsheet
12 functionality manager comprises:

13 a cell table to maintain data values and formulas used in the table; and

14 a recalculation engine to recalculate the formulas following a change to a
15 data value or formula in the cell table.
16

17 7. (Original.) The architecture of claim 1, wherein the spreadsheet
18 functionality manager comprises:

19 a cell table to maintain data values and formulas used in the table;

20 a delay parser to parse input for the cell table as needed; and

21 a recalculation engine to recalculate the formulas following a change to a
22 data value or formula in the cell table.
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- 1 8. (Original.) The architecture of claim 1, wherein multiple tables appear in
2 one or more documents, and the spreadsheet functionality manager is
3 configured to maintain data and formulas for the multiple tables.
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- 5 9. (Original.) The architecture of claim 1, wherein multiple tables appear in
6 one or more documents, and the spreadsheet functionality manager is
7 configured to track references made from one table to another table.
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- 9 10. (Original.) The architecture of claim 1, wherein multiple tables appear in
10 one or more documents, and the spreadsheet functionality manager is
11 configured to maintain data and formulas for the multiple tables and track
12 references made from one table to another table, the spreadsheet
13 functionality being further configured to update any data and formulas in
14 the multiple tables that is affected by a change made to one of the tables.
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1 11. (Original.) The architecture of claim 1, wherein multiple tables appear in
2 one or more documents, and wherein:

3 the table appearance manager comprises multiple spreadsheet components
4 so that there is one spreadsheet component for an associated table,
5 each spreadsheet component being configured to capture data and
6 formulas input into the associated table; and

7 the spreadsheet functionality manager comprises multiple grid components
8 so that there is one grid component for an associated table and an
9 associated spreadsheet component, each grid component maintaining
10 the data, the formulas, and formatting used in the associated table.

11
12 12. (Original.) The architecture of claim 1, further comprising a document
13 renderer to render the document.

14
15 13. (Original.) The architecture of claim 1, wherein the table appearance
16 manager and the spreadsheet functionality manager reside on different
17 computers.

18
19 14. (Original.) An architecture comprising:
20 a user interface to present a document containing text and a table; and
21 a table management system to manage how the table appears in the
22 document and to manage spreadsheet functions for the table.

1 15. (Original.) The architecture of claim 14, wherein the table management
2 system provides a formula edit box to permit the user to enter a formula
3 into a cell of the table.

4
5 16. (Original.) The architecture of claim 14, wherein the table management
6 system comprises:

7 a table component to support editing functionality of the table; and

8 a spreadsheet component to receive data and formulas input into the table.

9
10 17. (Original.) The architecture of claim 14, wherein the table management
11 system comprises:

12 a cell table to maintain data values and formulas used in the table; and

13 a format table to maintain formatting information used in the table.

14
15 18. (Original.) The architecture of claim 14, wherein the table management
16 system comprises:

17 a cell table to maintain data values and formulas used in the table; and

18 a recalculation engine to recalculate the formulas following a change to a
19 data value or formula in the cell table.

1 19. (Original.) The architecture of claim 14, wherein the table management
2 system comprises:

3 a cell table to maintain data values and formulas used in the table;

4 a delay parser to parse input for the cell table as needed; and

5 a recalculation engine to recalculate the formulas following a change to a
6 data value or formula in the cell table.

7
8 20. (Original.) The architecture of claim 14, wherein the document contains
9 multiple tables, and the table management system is configured to maintain
10 data and formulas for the multiple tables.

11
12 21. (Original.) The architecture of claim 14, wherein the user interface presents
13 multiple tables in one or more documents, and the table management
14 system is configured to maintain data and formulas for the multiple tables
15 and track references made from one table to another table, the table
16 management system being further configured to update any data and
17 formulas in the multiple tables that is affected by a change made to one of
18 the tables.

1 22. (Original.) An architecture comprising:
2 a complementary pair of spreadsheet and grid components for each table in
3 the document;
4 the spreadsheet component receiving data and formulas entered into the
5 table;
6 the grid component tracking the data and formulas in relation to cells in the
7 table; and
8 a recalculation engine to recalculate the formulas following a change to
9 data in the grid component.
10

11 23. (Original.) The architecture of claim 22, wherein new data is entered into
12 the table and in response:
13 the spreadsheet component receives the data and passes the data onto the
14 grid component;
15 the grid component stores the new data; and
16 the recalculation engine recalculates any formula affected by the new data.
17

18 24. (Original.) The architecture of claim 22, wherein a new formula is entered
19 into the table and in response:
20 the spreadsheet component receives the formula and passes it onto the grid
21 component;
22 the grid component stores the formula; and
23 the recalculation engine recalculates any formula affected by the entry of
24 the new formula.
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2 25. (Original.) The architecture of claim 22, wherein the grid component
3 comprises:

4 a cell table to maintain data and formulas in cells associated with the table;

5 and

6 a format table to maintain formatting information pertaining to the cells
7 associated with the table.

8
9 26. (Original.) The architecture of claim 22, wherein the spreadsheet
10 component provides a formula edit box user interface that permits user
11 entry of a formula.

12
13 27. (Original.) The architecture of claim 22, wherein the spreadsheet
14 component facilitates referencing between cells in the table and between a
15 first cell in a first table and a second cell in a second table.

16
17 28. (Original.) The architecture of claim 22, wherein the spreadsheet
18 component comprises:

19 a cell editing element to facilitate editing in the table; and

20 a cell behavior element to manage referencing between cells in the table
21 and among cells in multiple tables.

22
23 29. (Original.) The architecture of claim 22, further comprising a parser to
24 parse the data and formulas received by the spreadsheet component.
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2 30. (Original.) The architecture of claim 22, further comprising a delay parser
3 to parse the data and formulas received by the spreadsheet component on an
4 as-needed basis.

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6 31. (Original.) The architecture of claim 22, further comprising multiple
7 complementary pairs of grid and spreadsheet components corresponding to
8 multiple tables in the document.

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10 32. (Original.) The architecture of claim 31, wherein a first grid component
11 references a second grid component to support cross table referencing from
12 a first table associated with the first grid component and a second table
13 associated with the second grid component.

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15 33. (Original.) The architecture of claim 32, wherein the recalculation engine,
16 responsive to a change in the second grid component, recalculates a
17 formula in the first grid component.

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19 34. (Original.) An architecture comprising:
20 a document renderer to render a document containing at least one table;
21 a spreadsheet component associated with the table to accept data and
22 formulas entered into the table; and
23 a spreadsheet engine to manage the data and formulas and to recalculate the
24 formulas as the data in the table is modified.
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2 35. (Original.) The architecture of claim 34, wherein the document renderer
3 resides on a different computer than the spreadsheet component and the
4 spreadsheet engine.

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6 36. (Original.) The architecture of claim 34, wherein the spreadsheet
7 component provides a formula edit box user interface that permits user
8 entry of a formula.

9
10 37. (Original.) The architecture of claim 34, wherein the document contains
11 first and second tables, further comprising:
12 first and second spreadsheet components for respective first and second
13 tables, the spreadsheet components facilitating referencing between
14 a first cell in the first table and a second cell in the second table; and
15 the spreadsheet engine managing the data and formulas in the first and
16 second tables and recalculating the first cell in the first table in
17 response to a change of the second cell in the second table.

1 38. (Original.) The architecture of claim 34, wherein the document renderer
2 renders a free floating field separate from the table, the architecture further
3 comprising:

4 a spreadsheet component associated with the free floating field to accept a
5 formula; and

6 the spreadsheet engine being further configured to manage the formula in
7 the free floating field and to recalculate the formula as the table is
8 modified.

9
10 39. (Original.) The architecture of claim 34, wherein a particular cell in the
11 table contains a non-calculation formula that is not evaluated by the
12 spreadsheet engine but which defines a dependency between two cells.

13
14 40. (Original.) The architecture of claim 34, further comprising a document
15 object to perform insertion of the tables.

1 41. (Original.) An architecture comprising:
2 first and second tables renderable as part of a common document;
3 a first spreadsheet component to receive at least one of data or a first
4 formula entered into a first cell in the first table;
5 a first grid component to hold the data or first formula in association with
6 the first cell of the first table;
7 a second spreadsheet component to receive at least a second formula
8 entered into a second cell in the second table, the second formula
9 referencing the first cell in the first table; and
10 a second grid component to hold the second formula in association with the
11 second cell of the second table.

12
13 42. (Original.) The architecture of claim 41, wherein the first table is nested
14 within the second table.

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16 43. (Original.) The architecture of claim 41, wherein the second spreadsheet
17 component presents a formula edit box to allow user entry of the second
18 formula.

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20 44. (Original.) The architecture of claim 41, wherein the second spreadsheet
21 component facilitates reference editing to the first cell in the first table.
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1 45. (Original.) The architecture of claim 41, wherein the first table is nested
2 within the second table and the second spreadsheet component facilitates
3 reference editing to the first cell in the first table.

4
5 46. (Original.) The architecture of claim 41, further comprising a recalculation
6 engine to recalculate the second formula held in the second grid component
7 in response to a change of the first cell in the first grid component.

8
9 47. (Original.) The architecture of claim 46, wherein the second table is
10 updated to reflect a result produced by the recalculation engine.

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12 48. (Original.) The architecture of claim 46, wherein the first and second tables
13 are updated to reflect a result produced by the recalculation engine.

14
15 49. (Original.) The architecture of claim 46, wherein the first table is nested
16 within a particular cell of the second table, the particular cell containing a
17 non-calculation formula that is not evaluated by the recalculation engine
18 but which defines a dependency between the two cells.

1 50. (Original.) The architecture of claim 41, further comprising:
2 a free floating field renderable in the document but separately from the first
3 and second tables;
4 a third spreadsheet component to receive a third formula entered into the
5 free floating field; and
6 a third grid component to hold the third formula.

7
8 51. (Original.) A method comprising:
9 presenting a table within a document;
10 receiving data and at least one formula referencing the data entered into the
11 table;
12 managing the data and formula from the table;
13 recalculating the formula in response to change of the data; and
14 presenting a modified table within the document, the modified table
15 reflecting results from said recalculating.

16
17 52. (Original.) The method of claim 51, wherein the presenting comprises
18 rendering a markup document.

19
20 53. (Original.) The method of claim 51, wherein the managing comprises
21 storing the data and formula in one or more objects associated with the
22 table.
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- 1 54. (Original.) The method of claim 51, wherein the managing comprises:
2 maintaining the data and formula in a first structure representative of the
3 table; and
4 maintaining formatting information for the table in a second structure
5 representative of the table.
6
- 7 55. (Original.) The method of claim 51, wherein the recalculating comprises
8 traversing a chain of formulas and calculating the formulas according to an
9 order in the chain.
10
- 11 56. (Original.) The method of claim 51, further comprising presenting a free
12 floating field in the document and separate from the table, the free floating
13 field containing a formula that references the data in the table.
14
- 15 57. (Original.) The method of claim 56, wherein the recalculating further
16 comprises recalculating the formula in the free floating field in response to
17 change of the data.
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- 19 58. (Original.) A computer readable medium having computer-executable
20 instructions that, when executed on one or more processors, perform the
21 method as recited in claim 56.
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1 59. (Original.) A method comprising:
2 presenting a table user interface (UI) within a markup document, the table
3 UI containing data and at least one formula referencing the data;
4 creating a cell table to hold the data and formula for the table UI;
5 creating a format table to hold formatting information for the table UI;
6 receiving user input in the table UI;
7 parsing the user input to update the cell table and the format table;
8 in an event the user input changes the data being referenced, recalculating
9 the formula in the cell table to produce a new result; and
10 presenting the table UI with the new result.

11
12 60. (Original.) The method of claim 59, wherein the presenting comprises
13 rendering the table UI as an HTML table.

14
15 61. (Original.) The method of claim 59, wherein the cell table references one or
16 more cell objects, each cell object being associated with a cell in the table
17 UI.

18
19 62. (Original.) The method of claim 59, wherein the format table contains
20 formatting information for individual cells in the table UI.

21
22 63. (Original.) The method of claim 59, wherein the parsing determines
23 whether the user input is a formula, data, or text and determines the data
24 format of that input.
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2 64. (Original.) The method of claim 59, wherein the recalculating comprises
3 traversing a chain of formulas and calculating the formulas according to an
4 order in the chain.

5
6 65. (Original.) The method of claim 59, wherein parsing comprises delaying
7 parsing of selected cells in the cell table and the recalculating comprises
8 inducing additional parsing of the selected cells as needed by the formula.

9
10 66. (Original.) The method of claim 59, further comprising presenting a free
11 floating field in the document and separate from the table, the free floating
12 field containing a formula that references the data in the table.

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14 67. (Original.) The method of claim 66, wherein the recalculating further
15 comprises recalculating the formula in the free floating field in response to
16 change of the data.

17
18 68. (Original.) A computer readable medium having computer-executable
19 instructions that, when executed on one or more processors, perform the
20 method as recited in claim 59.

- 1 69. (Original.) A method comprising:
2 presenting first and second tables within a document, the first and second
3 tables being separate from one another;
4 receiving data for the first table;
5 receiving a formula for the second table, the formula referencing the data in
6 the first table; and
7 upon modification of the data in the first table, automatically recalculating
8 the formula in the second table.
9
- 10 70. (Original.) The method of claim 69, wherein the presenting comprises
11 nesting the first table within the second table.
12
- 13 71. (Original.) The method of claim 69, wherein the receiving formula
14 comprises displaying a formula edit box in association with a cell of the
15 table into which the formula is being entered, the formula edit box
16 permitting user entry of the formula.
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- 18 72. (Original.) The method of claim 69, further comprising enabling a user to
19 reference the data in the first table when entering the formula in the second
20 table.
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1 73. (Original.) The method of claim 69, wherein the presenting comprises
2 nesting the first table within the second table and further comprising
3 enabling a user to reference the data in the first table when entering the
4 formula in the second table.

5
6 74. (Original.) The method of claim 69, wherein the presenting comprises
7 nesting the first table within a particular cell of the second table, the
8 particular cell containing a non-calculation formula that is not recalculated
9 as part of the recalculating.

10
11 75. (Original.) The method of claim 69, further comprising presenting a free
12 floating field in the document and separate from the first and second tables,
13 the free floating field containing a formula that references one of the data in
14 the first table or the formula in the second table.

15
16 76. (Original.) The method of claim 75, wherein the recalculating further
17 comprises recalculating the formula in the free floating field in response to
18 change of the data in the first table.

19
20 77. (Original.) A computer readable medium having computer-executable
21 instructions that, when executed on one or more processors, perform the
22 method as recited in claim 69.
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1 78. (Original.) A method comprising:
2 presenting first and second tables within a document, the first table having
3 at least one cell with contents; and
4 referencing the cell in the first table from a cell in the second table.
5

6 79. (Original.) The method of claim 78, wherein the presenting comprises
7 nesting the first table within the second table.
8

9 80. (Original.) The method of claim 78, wherein the referencing comprises
10 using a pointer to reference the cell.
11

12 81. (Original.) A computer readable medium having computer-executable
13 instructions that, when executed on one or more processors, perform the
14 method as recited in claim 78.
15

16 82. (Original.) A method comprising:
17 creating a first spreadsheet table for display in a document; and
18 creating a second spreadsheet table for display in the document, the second
19 spreadsheet table being nested within the first spreadsheet table
20 when displayed.
21

22 83. (Original.) A data structure stored on a computer readable medium, the data
23 structure being produced as a result of the method of claim 82.
24
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1 84. (Original.) A computer readable medium having computer-executable
2 instructions that, when executed on one or more processors, perform the
3 method as recited in claim 82.
4

5 85. (Original.) A method comprising:
6 integrating text and a spreadsheet table within a common document, the
7 spreadsheet table supporting spreadsheet functionality;
8 formatting the text according to a particular format; and
9 formatting cells in the spreadsheet table according to the particular format.
10

11 86. (Original.) A computer readable medium having computer-executable
12 instructions that, when executed on one or more processors, perform the
13 method as recited in claim 85.
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15 87. (Original.) A method comprising:
16 integrating text and a spreadsheet table within a common document, the
17 spreadsheet table supporting spreadsheet functionality; and
18 evaluating the text and the spreadsheet table concurrently for possible
19 spelling or grammatical errors.
20

21 88. (Original.) A computer readable medium having computer-executable
22 instructions that, when executed on one or more processors, perform the
23 method as recited in claim 87.
24
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2 89. (Original.) A method comprising:
3 integrating text and a spreadsheet table within a common document, the
4 spreadsheet table supporting spreadsheet functionality;
5 enabling a user to select a control function to modify or evaluate an aspect
6 of the document; and
7 applying the control function across both the text and the spreadsheet table.
8

9 90. (Original.) The method of claim 89, wherein the control function is selected
10 from a group of functions including formatting, spell checking, grammar
11 checking, find, find and replace, auto-correct, applying document themes,
12 inserting lists, images, drawings, charts, hyperlinks, automatic detection of
13 hyperlinks, and automatic detection of lists.
14

15 91. (Original.) The method of claim 89, wherein the control function is any text
16 feature that can be applied to the text and the applying comprises applying
17 that text feature to the spreadsheet table.
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1 92. (Original.) A method comprising:
2 integrating text and a first spreadsheet table within a common document,
3 the spreadsheet table supporting spreadsheet functionality;
4 creating a second spreadsheet table by cutting or copying all or part of the
5 first spreadsheet table and pasting said all or part of the first
6 spreadsheet table; and
7 updating any references to cells in the first spreadsheet table or the second
8 spreadsheet table to reflect the newly created second spreadsheet
9 table.

10
11 93. (Original.) A computer readable medium having computer-executable
12 instructions that, when executed on one or more processors, performs the
13 following:
14 construct a table user interface (UI) for display within a document;
15 create a cell table to hold data and at least one formula for the table UI; and
16 upon modification of the data, recalculate the formula in the cell table to
17 produce a new result.

18
19 94. (Original.) The computer medium of claim 93, further comprising
20 computer-executable instructions that, when executed on one or more
21 processors, perform creation of a format table to hold information
22 pertaining to a data format of the table UI.
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1 95. (Original.) A computer readable medium having computer-executable
2 instructions that, when executed on one or more processors, performs the
3 following:

4 construct a first table user interface (UI) for display within a document;

5 create a first cell table to hold data for the first table UI;

6 construct a second table user interface (UI) for display within the
7 document;

8 create a second cell table to hold a formula for the second table UI, the
9 formula referencing the data in the first cell table; and

10 upon modification of the data in the first cell table, recalculate the formula
11 in the second cell table to produce a new result.

12
13 96. (Original.) The computer medium of claim 95, wherein the first table UI is
14 nested within the second table UI.

1 97. (Original.) A computer readable medium having computer-executable
2 instructions that, when executed on one or more processors, performs the
3 following:

4 construct a table user interface (UI) for display within a document;

5 create a first cell table to hold data for the table UI;

6 construct a free floating field for display within the document;

7 create a second cell table to hold a formula for the free floating field, the
8 formula referencing the data in the first cell table; and

9 upon modification of the data in the first cell table, recalculate the formula
10 in the second cell table to produce a new result.

11
12 98. (Original.) A computer comprising:

13 a memory;

14 a processing unit coupled to the memory; and

15 an architecture stored in the memory and executable on the processing unit
16 to construct and display a document having a table with integrated
17 spreadsheet functionality.

18
19 99. (Original.) A computer as recited in claim 98, wherein the architecture
20 constructs multiple tables within the document, at least one table containing
21 a reference to contents in another table.

1 100. (Original.) A computer as recited in claim 98, wherein the architecture
2 constructs multiple tables within the document, the tables containing
3 formulas referencing contents of other tables, whereupon modification of
4 content in one of the tables, the architecture automatically recalculates all
5 formulas in the tables in the document.

6
7 101. (Original.) A computer as recited in claim 98, wherein the architecture
8 constructs a free floating field in the document, the free floating field
9 containing a formula referencing content in the table, whereupon
10 modification of content in the table, the architecture automatically
11 recalculates the formulas in the free floating field.

12
13 102. (Original.) A computer as recited in claim 98, wherein the architecture
14 comprises:

15 a table appearance manager to manage how a table appears in the
16 document; and

17 a spreadsheet functionality manager to manage spreadsheet functions for
18 the table.

19
20 103. (Original.) A computer as recited in claim 98, wherein the architecture
21 comprises a complementary pair of spreadsheet and grid objects for the
22 table, the spreadsheet object facilitating user entry of content into the table
23 and the grid object holding the content for the table.
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1 104. (Original.) A markup document stored on a computer readable medium and
2 renderable on a display, comprising:

3 a text portion;

4 a first spreadsheet table having multiple cells; and

5 a second spreadsheet table nested within a cell of the first spreadsheet table.

6
7 105. (Original.) A data structure stored as recited in claim 104, further
8 comprising a free floating field embedded in the text portion, the free
9 floating field referencing a cell in one of the first table or the second table.
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